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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,339	08/01/2003	Thomas Richards	08935-294001 / M-5029	4181
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FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			EXAMINER ECHELMEYER, ALIX ELIZABETH	
			ART UNIT 1745	PAPER NUMBER

DATE MAILED: 09/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/633,339

Applicant(s)

RICHARDS ET AL.

Examiner

Alix Elizabeth Echelmeyer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15, 51-55 and 59-89 is/are pending in the application.
- 4a) Of the above claim(s) 14, 71-82, 86 and 88 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15, 51-55, 59-70, 83-85, 87 and 89 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11-28-03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 8-1-03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to the amendment filed August 21, 2006. The applicant elected Group I and the species of claims 2-13 and 15 in response to the Election/Restriction Requirement of July 18, 2006. Claims 1, 8, 15, 52 and 53 have been amended. Claims 16-50 and 56-58 have been cancelled. Claims 59-89 have been added. Claims 1-15, 51-55, 59-70, 83-85, 87 and 89 are rejected for the reasons given below.
2. Newly submitted claims 71-82, 86 and 88 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: these claims are drawn to the nonelected species of claim 14.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 71-82, 86 and 88 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Objections

3. Claim 85 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim, or amend the claim to place the claim in proper dependent

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form, or rewrite the claim in independent form. Claim 85 requires that the first and second members of claim 83 be cylindrical; however this requirement is already in claim 83.

4. Claim 15 is objected to for being identical to claim 4.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 83 recites the limitation "cylindrical" in the members of the battery. There is insufficient antecedent basis for this limitation in the claim. The examiner believes that the cylindrical limitation could be eliminated from claim 83 since the first and second member are not required to be cylindrical in the rest of the claim and claim 85 requires that they be cylindrical. Elimination of "cylindrical" in claim 83 would also overcome the objection to claim 85.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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8. Claims 1-10, 12, 15, 51-55, 59-68, 83-85, 87 and 89 are rejected under 35 U.S.C. 102(e) as being anticipated by Johnson (US Patent 6,955,187).

Regarding claims 1-3, 51-53 and 59-61, Johnson teaches a battery having a control valve for controlling airflow into the battery. The control portion is made of two cylindrical sleeves, or members, having holes, that can be moved into or out of registration depending on whether air is required for the cell. The movement is controlled by actuators that are attached to the cylinders (abstract; Figure 1; column 3 lines 9-11).

As for claims 4, 15 and 62, as seen in Figure 1, the multiple holes are arranged in columns along the cylinders.

Regarding claims 5 and 63, it can be seen in Figures 5 and 6 that the second member is coupled to the mechanism and that the second member moves in relation to the first.

As for claims 83, 85 and 87, the "first member" of the instant application is considered the inner member of Johnson and the "second member" the outer member. Thus, Johnson also teaches these limitations as discussed above.

As for claims 6, 9, 55, 64, 67, Johnson teaches that the actuators are made of wire shape memory alloys (column 3 lines 55-59).

Regarding claims 7, 65 and 89, Johnson further teaches that the shape memory alloy is preferably TiNi.

As for claim 54, in Johnson, the current required to induce a shape change in the actuators is generated by electricity from the electrochemical cell (column 4 lines 15-17).

Regarding claims 10, 12 and 68, it can be seen in Figures 5 and 6 of Johnson that a member is coupled between the actuator and the upper end portion of the second member.

Regarding claims 8, 66 and 84, Johnson teaches that when the valve is in the fully off position, no current flows from the cell to the wire actuator (column 5 lines 22-27).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 11, 13, 69 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson.

The teachings of Johnson as discussed above are incorporated herein.

Johnson discloses the claimed invention except for the shape memory alloy actuator being in the shape of a ribbon instead of a wire. It would have been an obvious matter of design choice to use a ribbon or a wire, since such a modification would have involved a mere change in the shape of the component. A change in shape is generally recognized as being within the level of ordinary skill in the art. MPEP 2144.04 (IV B)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alix Elizabeth Echelmeyer whose telephone number is 571-272-1101. The examiner can normally be reached on Mon-Fri 7-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Alix Elizabeth Echelmeyer
Examiner
Art Unit 1745

aee

GREGG CANTELMO
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read "Gregg Cantelmo", with a stylized flourish at the end.